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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,592	05/30/2001	Akira Arai	9319A-000221	8566

27572 7590 06/10/2003

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. BOX 828  
BLOOMFIELD HILLS, MI 48303

EXAMINER

SHEEHAN, JOHN P

ART UNIT	PAPER NUMBER
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1742

14

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-14

**Office Action Summary**

Application No. 09/871,592	Applicant(s) ARAI ET AL.	
Examiner John P. Sheehan	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>10&amp;13</u> . | 6) <input type="checkbox"/> Other:  |

***DETAILED ACTION***

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 30, 2003 has been entered.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

1. The information disclosure statement filed June 2, 2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of the Korean Office Action relating to Korean Patent Application No. 2001-0030200 that is not in the English language. All of the other references cited in this information disclosure statement have been considered by the Examiner.

2. The information disclosure statement filed February 21, 2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of the Japanese Office Action relating to Japanese Patent Application No. 2000-399881 that is not in the English language. All of the other references cited in this information disclosure statement have been considered by the Examiner.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 10 and 13 to 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Croat (US Patent No. 4,851,058, cited by the applicants in the IDS submitted August 31, 2001) in view of Toshio et al. (Toshio, Japanese Patent Document No. 09-271909).

Croat teaches a method of making a magnetic material having a composition that overlaps the alloy composition recited in the instant claims (column 2, lines 15 to 30). Croat's method comprises melt spinning (column 4, lines 18 to 58), that is, "by colliding a molten alloy to a circumferential surface of a cooling roll so as to be cooled and solidify it" (applicants' claim 1, lines 2 to 4).

Toshio teaches a cooling roll for manufacturing a ribbon shaped metal alloy material wherein the cooling roll has a grooved surface so as to prevent the formation of air pockets, that is, dimples, produce a more uniform product and to improve the magnetic and mechanical properties of the ribbon metal alloy (English language abstract first paragraph). Toshio teaches that the grooves are 0.1 to 50 microns wide and have a depth of about 10 microns or more. Toshio teaches that the groove width of 0.1 to 50 microns is such that the molten metal does not enter the groove (See paragraph 0013 of the English language translation submitted by the applicants). Toshio teaches a specific example of a cooling roll having a width of 30 microns and a pitch (interval) of 16 microns (See the English language translation submitted by the applicants, paragraph 0015, line 8). Toshio does not explicitly disclose the ratio of the area of the grooves to the total area of the cooling roll, however the Examiner considers that the ratio of the groove width to the sum of the groove width and groove pitch is equivalent to the ratio of the area of the grooves to the total area of the cooling roll. Based on Toshio's example;

$$\frac{\text{Groove Width}}{\text{Groove Width} + \text{Groove Pitch}} = \frac{30}{16+30} = 0.65 \text{ or } 65\%$$

Thus, this example teaches a groove width of 30 microns and a ratio of the grooves to the total area of the cooling roll of 65% which are encompassed by applicants' claim 1, which recites a groove width of 0.5 to 90 microns and a ratio of the groove area to the total area of the cooling roll encompassed by the instant claims value of 30 to 99.5%. Further, Toshio teaches a groove pitch (interval) of 200 microns or less (paragraph 0014, line 4). Again, Toshio does not explicitly disclose the ratio of the area of the

Art Unit: 1742

grooves to the total area of the cooling roll, but taking a sampling of groove widths and groove pitches taught by Toshio:

Groove Width = 50 microns

Groove Pitch = 10, 60, 80, 100 and 200 microns

$$\frac{\text{Groove Width}}{\text{Groove Width} + \text{Groove Pitch}} = \frac{50}{50+10} = 0.83 \text{ or } 83\%$$

$$\frac{\text{Groove Width}}{\text{Groove Width} + \text{Groove Pitch}} = \frac{50}{50+60} = 0.45 \text{ or } 45\%$$

$$\frac{\text{Groove Width}}{\text{Groove Width} + \text{Groove Pitch}} = \frac{50}{50+80} = 0.38 \text{ or } 38\%$$

$$\frac{\text{Groove Width}}{\text{Groove Width} + \text{Groove Pitch}} = \frac{50}{50+100} = 0.33 \text{ or } 33\%$$

$$\frac{\text{Groove Width}}{\text{Groove Width} + \text{Groove Pitch}} = \frac{50}{50+200} = 0.20 \text{ or } 20\%$$

Thus, Toshio teaches ratios of the area of the grooves to the total area of the cooling roll that overlap the ratio of the area of the grooves to the total area of the cooling roll of 30 to 99.5% recited in applicants' claims and groove widths of 0.1 to 50 microns that overlap the groove width of 0.5 to 90 microns recited in applicants' claims.

Croat and the claimed process differ in that Croat does not teach the presence of "dimple correcting means" as recited in the instant claims.

However, one of ordinary skill in the art at the time the invention was made would have been motivated to modify Croat's cooling roll to a cooling roll having a grooved

Art Unit: 1742

surface so as to prevent the formation of air pockets, that is, dimples, produce a more uniform product and to improve the magnetic and mechanical properties of the ribbon metal alloy as taught by Toshio (English language abstract first paragraph).

3. Claims 2, 3 and 5 to 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Croat taken in view of Toshio as applied to claims 1, 10 and 13 to 16 as set forth above, and further in view of Fukuno (Fukuno, US Patent No. 5,665,177, cited by the applicants in the IDS submitted May 30,2001).

Croat and Toshio teach and are applied as set forth above.

Fukuno teaches a cooling roll for manufacturing a ribbon shaped metal alloy material wherein the cooling roll has a grooved surface. Fukuno teaches that to minimize variation in the crystal size of the product, that is, to make a more uniform product, the cooling roll is preferably comprised of a base and a surface layer (column 6, lines 65 to 67). Fukuno teaches that the outer surface layer on the cooling roll should have a thermal conductivity lower than the thermal conductivity of the cooling roll base (column 7, lines 1 to 7) as recited in applicants' claim 3. Fukuno teaches a thermal conductivity of the cooling roll outer surface that overlaps applicants' claim 5 (column 7, lines 3 to 6). Fukuno teaches a cooling roll surface layer having a thickness of 10 to 100 microns (column 7, lines 18 to 20).

The claims and the combination Croat and Toshio differ in that Croat and Toshio do not teach a cooling roll comprised of a base and a surface layer nor do the references teach the thermal expansion coefficient as recited in applicants' claim 6.



However, one of ordinary skill in the art at the time the invention was made would have been motivated to modify Toshio's cooling roll to a cooling roll having a base and a surface coating so as to minimize the variation in crystal grain size and make the product more uniform as taught by Fukuno. Further, the determination of an appropriate thermal expansion coefficient for the surface layer of the cooling roll is considered well within the skill of one of ordinary skill in the art.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8, 10 and 13 to 17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 18 of copending Application No. 09/833,805. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed process in each of these two sets of claims overlap. Both sets of claims are directed to a method of making a magnetic material having the same composition, by a process of

Art Unit: 1742

melt spinning, that is, "by colliding a molten alloy to a circumferential surface of a cooling roll so as to be cooled and solidify it" (applicants' claim 1, lines 2 to 4)". The instant claims recite the presence of "dimple correcting means" while the claims in 09/833,805 recite the presence of "gas expelling means". However, each of these terms encompasses the presence of grooves on the cooling rolls. Accordingly, these two sets of claims are considered to overlap. In view of this overlap, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because where the claims overlap a prima facie case of obviousness exists, MPEP 2144.05.

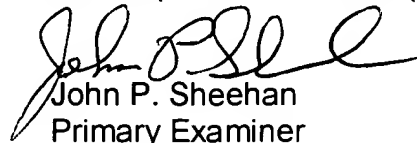
This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (703) 308-3861. The examiner can normally be reached on T-F (6:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

  
John P. Sheehan  
Primary Examiner  
Art Unit 1742

jps  
June 6, 2003